Regional Colleges

Saskatchewan Post-Secondary Education and Skills Training

Regional Colleges' Network of TEL Services

Implementation Plan Report

June 21, 2001

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1. EXECUTIVE SUMMARY

This report presents the Implementation Plan for the development of the Regional Colleges' Network of Technology Enhanced Learning (TEL) Services. The Implementation Plan was developed by a working group of representatives from each Regional College and Post-Secondary Education and Skills Training (PSEST). The purpose of the Implementation Plan is to provide a framework for the Regional Colleges to guide the implementation of TEL services in their local context.

As the term implies, technology enhanced learning is focused on using technology to enhance and extend learning opportunities, whether that learning occurs in a classroom setting, via distance education or other mode of delivery. Technology enhanced learning is concerned with enhancing accessibility and quality, not with promoting technology itself or with applying technology for ends that are not rooted in the goals of education and training.

1.1. Policy Framework and Requirement for a Network of TEL Services

The province's Technology Enhanced Learning (TEL) Action Plan provides a system-wide framework for increasing the use of TEL in post-secondary education and training. The TEL Action Plan identifies a number of strategic collaborative priorities that involve institutions and other parties in joint efforts that will have high impact in achieving the goals of the plan. A key priority for the TEL Action Plan is developing a provincial network of TEL services. The network of TEL services will help learners access post-secondary education and training and assist communities and employers in meeting their education and training needs by providing access to information and communication technologies and related training and support.

The Regional College Review also recommended the development of a network of TEL services to enhance their service offerings by providing learners with:

- access to computers, the Internet, video conferencing and other technologies used for TEL;
- training and assistance in the skills needed by learners to be successful in using TEL;
- facilities and mechanisms for learners to connect with tutors, peers, employers, and community groups;
- evaluation and modification of TEL program and course content from other post-secondary institutions.

The review also recommended that Saskatchewan Post-Secondary Education and Skills Training (PSEST) work with the Regional Colleges to create an implementation plan for the network.

A key impetus for such a network of TEL services is the growing demand for post-secondary education and training opportunities that meet the needs of various groups for general and specific training at times and locations that are convenient for them. These groups include basic education students, youth wishing to access post-secondary education in their own communities, Métis and First Nations peoples, workers and employers.

1.1.1. Environmental Scan

As part of the planning methodology, the working group conducted a review of TEL related practices in other jurisdictions and lessons gleaned from the TEL experiences of the Regional Colleges themselves. Several key themes and concepts emerged from this analysis.

- The number of online programs and course offerings being developed is growing rapidly, providing learners with more choices. At the same time, rationalization of TEL offerings is happening as post-secondary institutions form consortia for their online programs and are providing inter-institutional credit transfers.

- The student population accessing online programs is more diverse than the on-campus population. A significant number of the learners are older, have lower than average incomes, are female and access online programs and courses for self-interest, or to complete their studies. Initially the students often need extra technical, academic and study support, but become independent learners over time. Support services must be targeted to students to meet their particular needs, and technology use must be adapted to the subject matter and the student's learning style.

- Studies of online education find that access to support services are a critical component in student success. However, jurisdictions differ in their approach to providing these services. Some jurisdictions and institutions only offer services to students taking their programs and courses. Others offer an open model that provides services to anyone. The Regional Colleges' Network of TEL Services plan is a form of the open model.

- "High tech" delivery needs personalized support. Personalized support is achieved by making different types of services available (technical support, academic support such as tutors or counsellors, and peer support), and providing opportunities for both person-to-person and electronic contact.

- Partnerships are a critical element in developing a sustainable TEL environment. Partners can provide access to needed resources and services and help with issues that arise in delivering TEL opportunities that an individual institution cannot address.

1.2. Regional Colleges' Network of TEL Services Vision

The proposed vision for the Regional Colleges' Network of TEL Services is "*to provide learners, employers and communities in rural and northern Saskatchewan with access to services that enhance their participation and success in post-secondary education and training opportunities using information and communication technologies.*"

The Regional Colleges' Network of TEL Services will support learners in rural and northern Saskatchewan in accessing post-secondary education and training opportunities through on-site and online services and technical support. The network's services will focus on six areas:

- *Access to career and student services* – services that assist clients through the pre-enrollment and enrollment process, e.g. educational planning, career and academic counselling, registration assistance, advocacy with educational institutions and other agencies.
- *Access to learning opportunities* – use of various technologies and modes to enhance and/or provide access to degree/certificate/diploma programs, academic preparation, industry and institute certified training, non-credit and community training and customized, skill training for business.
- *Instruction in learning skills* – preparatory skills training in areas that foster success in learning, such as study skills, time management, technology skills, orientation to distance learning, and writing and math skills.
- *Access to technology and technical support* – providing clients and staff with access to computers, fax machines, the Internet and other technologies, and technical support to assist in the use of these technologies.
- *Access to learning resources* - providing access to materials in hard copy and electronic formats.
- *Access to study supports* – providing clients with access to mentoring, tutoring, discussion groups, peer support, exam preparation and invigilation, study spaces and meeting rooms.

1.3. Current Situation Analysis

Implementing the vision for the Regional Colleges' Network of TEL Services requires four main categories of resources:

1. Technology (computers, display/presentation technologies, phones/faxes)

2. Human resources (counsellors, instructors, tutors, technical support staff)
3. Facilities (office space, classrooms, study and meeting space)
4. Other resources (testing instruments, subscriptions, library resources)

The vision must build on the current services provided by the Regional Colleges. Therefore, the working group conducted a survey and analysis of currently available resources in the Regional Colleges to determine what resources might be availability for implementing the TEL services identified in the vision.

The Regional Colleges have been able to establish some computer labs and have used other technologies to deliver TEL courses, programs and services. The colleges have also established partnerships with governments and community organizations that provide opportunities for TEL initiatives and for developing expertise in TEL delivery. However, there is no spare capacity, as colleges do not have large numbers of newer generation computers. All available computers, and other technologies, are fully utilized in the Regional Colleges' current program offerings.

The Regional Colleges also face barriers in developing staff technology-related skills because funding and time for staff training is limited. The Regional Colleges provide technology-related training to staff where possible, but the demand for services exceeds the supply of available resources and staff time is already fully allocated.

The greatest barrier to developing the Regional Colleges' Network of TEL Services is a lack of long-term funding. Sustaining TEL services will be at risk without a long-term funding commitment to maintain the technology, human resources' skill sets and other required resources.

1.4. Implementation Plan Framework.

Implementing TEL services will require new material, technical resources and additional staff. Sustaining TEL services requires sufficient financing for initial acquisition and on-going maintenance. The proposed implementation plan framework for the Regional Colleges' Network of TEL services is comprised of two parts: **implementation scenarios** and an **implementation plan approach**.

The **implementation scenarios** describe the types and levels of services to be provided at a Regional College learning facility. For example, the base level scenario describes the core set of services that would be implemented at a Regional College learning facility. The medium and high level scenarios describe additional services and resources to be provided at a particular location, based on demand and funding. Each scenario is flexible so that Regional Colleges can respond to local needs while providing a consistent level of services in rural and northern Saskatchewan.

The proposed **implementation plan** is to initiate development of the Regional Colleges' Network of TEL Services by piloting the base scenario in at least one location in each Regional College. This would involve renovating facilities and acquiring the recommended minimum number of computers, workstations and other resources. The estimated cost for implementing the base scenario is approximately $135,000 per pilot. Costs for facility rental and on-going maintenance costs would be additional. The Regional Colleges will monitor and evaluate the pilots to identify changes and actions needed to improve the TEL services. The results will serve as input into the second phase of the plan, incorporating the on-going planning for TEL services into the Regional Colleges' business planning process, starting in fiscal 2002-03.

1.5. RECOMMENDATIONS

As they start developing TEL services, PSEST and the Regional Colleges will have to address issues such as financing for sustainable TEL services, changes in current programming and hours of service, and the type of service model to be provided.

The Working Group recommended that the Regional Colleges and PSEST approve the proposed vision and implementation plan for the Network of TEL Services by the end of June 2001. Each Regional College will then develop an initial plan for their pilot project by October 31st, 2001. This plan will become the basis for disbursing resources from the TEL budget and the Centenary Fund.

To create sustainable TEL services for the longer term, it is recommended that baseline funding for the services be built into the provincial TEL budget and Regional Colleges' budget. With this in place, the Regional Colleges should incorporate planning for TEL services into their business, communications and human resource development plans.

It is also recommended that the Regional Colleges build on their success in partnerships and TEL initiatives by participating on Task Teams or Working Groups to implement Campus Saskatchewan and by investigating opportunities for joint initiatives such as faculty professional development and consortium buying with other provincial institutions.

In conclusion, a more highly educated population is fundamental to the economic and social development of communities. While requiring a considerable effort, the Regional Colleges Network of TEL Services can make a significant contribution to rural and northern Saskatchewan by providing needed education and training opportunities and increasing learners' chances for success in distance education.

2. INTRODUCTION

In September 2000, the Regional Colleges' CEOs and Post Secondary Education and Skills Training (PSEST) established a Network of TEL Services Working Group to develop an implementation plan for a network of technology enhanced learning (TEL) services in rural and northern Saskatchewan. The Working Group was comprised of representatives from each Regional College and PSEST (Appendix A).

This report presents the recommended Implementation Plan for the Regional Colleges' Network of TEL Services. The purpose of the Implementation Plan is to provide a framework for the Regional Colleges to guide the implementation of the TEL services in their local context.

2.1. Policy Framework for the Network of TEL Services

2.1.1. TEL Action Plan

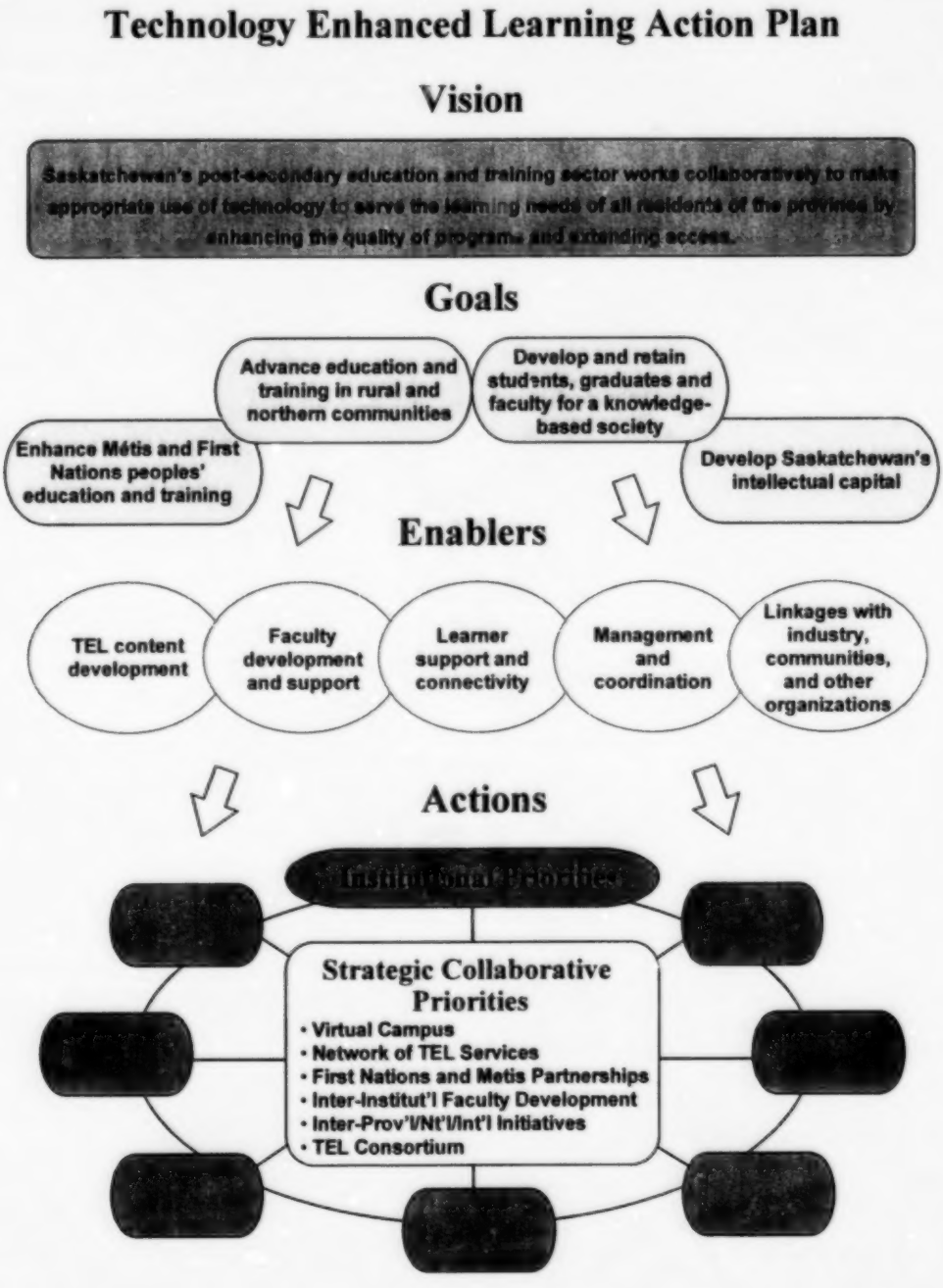
The *Technology Enhanced Learning: An Action Plan for Post-Secondary Education and Training in Saskatchewan* report of June 2000 laid out a collaborative framework for increasing use of technology for learning within the post-secondary education and training sector in the province. The diagram on the following page (Figure 1) illustrates the key components of the framework.

Advancing education and training in rural and northern Saskatchewan is one of the central goals of the TEL Action Plan, which include the following:

1. Advance education and training in rural and northern communities.
2. Enhance Métis and First Nations peoples' education and training.
3. Develop and retain students, graduates and faculty for a knowledge-based society.
4. Develop Saskatchewan's intellectual capital.

The TEL Action Plan identifies institutional and strategic collaborative priorities for the next five years. The institutional priorities include plans and actions that institutions will undertake to advance TEL in their organizations. The strategic collaborative priorities outline sector-wide activities that will be implemented through joint, inter-institutional efforts. One of the strategic, collaborative priorities is developing a network of TEL services in rural, northern and urban areas. The network of TEL services will help learners access post-secondary education and training and assist communities and employers in meeting their education and training needs by providing access to information and communication technologies and related training and support.

Figure 1: Components of the Technology Enhanced Learning Action Plan


Technology Enhanced Learning Action Plan
Vision
Saskatchewan's post-secondary education and training sector works collaboratively to make appropriate use of technology to serve the learning needs of all residents of the province by enhancing the quality of programs and extending access.
Goals
Advance education and training in rural and northern communities
Develop and retain students, graduates and faculty for a knowledge-based society
Enhance Métis and First Nations peoples' education and training
Develop Saskatchewan's intellectual capital
Enablers
TEL content development
Faculty development and support
Learner support and connectivity
Management and coordination
Linkages with industry, communities, and other organizations
Actions
Strategic Collaborative Priorities
• Virtual Campus
• Network of TEL Services
• First Nations and Metis Partnerships
• Inter-Institut'l Faculty Development
• Inter-Prov'l/Nt'l/Int'l Initiatives
• TEL Consortium

2.1.2. Regional Colleges Review

The 1999 Report of Regional Colleges Committee of Review, *Futures Close to Home*, examined strategic directions for the Regional Colleges to position them to meet emerging needs and challenges. A key recommendation was that the Regional Colleges develop a network of Technology Enhanced Learning centres to help people in rural and northern Saskatchewan access the growing number of education and training opportunities from post-secondary institutions available *via* information and communication technologies. The Review Committee recommended that Regional Colleges enhance and expand their services to include:

- access to computers, the Internet, video conferencing and other technologies used for TEL;
- training and assistance in the skills needed by learners to be successful in using TEL;
- facilities and mechanisms for learners to connect with tutors, peer groups, employers, professional groups and community groups that can support the learner in the learning process;
- evaluation and modification of TEL based programs and course content from other post-secondary institutions to fit the circumstances and needs of the colleges' constituents.

The Report recommended that the Regional Colleges, in taking on new roles in delivering TEL services, continue to be primary brokers and facilitators of learning in the provincial post-secondary system.

The Report further recommended that the Regional Colleges work with PSEST to develop the TEL services within a collaborative provincial plan that will provide an integrated array of university and technical education and training that is available where learners live and jobs are located. The Report recommended that the department work with the Regional Colleges to identify:

- required resources and infrastructure for a provincial network of TEL services;
- guidelines for developing the resources and infrastructure; and
- required resources for a complementary information technology plan.

2.1.3. Centenary Fund

The Centenary Fund, announced in the fall of 2000 and established to commemorate the province's centennial in 2005, is providing capital funding for the information technology infrastructure to implement TEL in the province. Eight hundred thousand dollars ($800,000) has been allocated to the Regional Colleges for infrastructure development, including purchasing computers,

enhancing Internet connections and renovating college facilities for TEL purposes. It was decided that disbursement of the Centenary Fund monies would be held until the completion of the implementation planning process.

2.1.4. Off-Campus University Programming Task Group

In June 1999, the Council of CEO's of the Regional Colleges and the Deans of Extension from the two universities initiated a task group to review off-campus university programming. SIAST agreed to participate and appointed a representative to the task group. The task group was asked to identify issues and make recommendations for improving access and services to learners in rural and northern Saskatchewan. The task group submitted their report in October 2000. Two recommendations from the report were:

- Identify the requirements for technology enhanced learning centres and address these requirements within the provincial TEL plan.
- That the partners involved with off-campus university programming collaborate to establish "Campus Saskatchewan", coordinating the development and delivery of programs and services by the various provincial public post-secondary institutions.

These and other recommendations from the task group's report served as input into the TEL Action Plan.

2.1.5. Campus Saskatchewan Planning Initiatives

The Network of TEL services is linked to development of the virtual Campus Saskatchewan, a collaborative initiative under the TEL Action Plan to:

- Develop an expanded array of courses and programs that responds to identified education and training needs, and allows learners to earn all or part of a credential by alternative means.
- Provide greater access, mobility and opportunities to learners through enhanced credit transfer arrangements.
- Provide technical support services for online learners across the province.
- Provide a streamlined admissions process for students taking courses and programs from different institutions.
- Develop a Web site for students, faculty, counsellors and the general public to provide one-stop access to Campus Saskatchewan information and services.

Development of Campus Saskatchewan is being directed by a steering committee comprised of representatives from PSEST, the two universities, SIAST and the Regional Colleges. Task Teams have been formed to address course development, Web site information and services, faculty development and support, learner support and technical infrastructure.

The Regional Colleges are working with SIAST and the universities on the Task Teams responsible for aspects of course development, learner support and technical infrastructure support. As part of the Learner Support Task Team, Regional Colleges are working with the other institutions on coordinating learner services across the province, including the rural and northern regions.

The work of the Task Teams will be ongoing as Campus Saskatchewan progresses through planning, design, development and implementation.

2.2. Implementation Planning Process

The objectives for the Regional Colleges' Network of TEL Services implementation plan are:

- To further develop the network of TEL services concept.
- To recommend priorities, budget requirements and roles and responsibilities for developing TEL services within the TEL Action Plan.
- To integrate TEL services with the Campus Saskatchewan.
- To build on the Regional Colleges' current responsibilities for identifying education and training needs, brokering opportunities to meet learners' needs, administering distance education courses at the local level, and providing student services in learning centres.
- To coordinate TEL services with the development of CommunityNet, a provincial collaboration to create an advanced communications network.

The implementation planning process was divided into three phases:

Vision Development – further defined the vision for the Network of TEL Services, identified the services to be provided and established the guiding principles to be used in developing the services. Activities in this phase included a visioning workshop, literature search and survey of best practices and lessons learned from other jurisdictions.

Current Situation Analysis – identified existing resources, determined resources required for delivering TEL services identified through the vision development process and analyzed the gap between requirements and availability.

Implementation Plan Development – developed scenarios for Regional Colleges to use for planning TEL services in response to local needs.

3. REQUIREMENT FOR A NETWORK OF TEL SERVICES

The Regional Colleges and other post-secondary partners are focusing on developing TEL services in response to a growing need for continuous education and an increase in the number of people seeking post-secondary education and training.

- Regional Colleges and SIAST have waiting lists of people wanting to access Basic Education. Slightly over one-half of all students in the province enrolled in Basic Education are taking their program through a Regional College. People in this group of learners often face a diversity of learning and social barriers. Technology provides opportunities to accommodate different learning styles and needs and to expand access to Basic Education programs. Using TEL also helps learners in Basic Education programs to develop technological literacy skills.
- There is a growing need for people to develop technological literacy skills. This need is particularly urgent for people seeking to enter the workforce who have had little or no experience in working with new technologies, as well as people in the workforce whose work is changed with the introduction of technology.
- Technology changes have also created new employment opportunities. The province faces shortages in skilled labour in key industry sectors, increasing the demand for technical education and training. Consequently, while the province is experiencing employment declines in some areas, the "demand for training is expected to increase, not decline, in the coming years."[1]
- Two barriers often experienced by employees in accessing job-related training are inconvenient time or location for the training; and, inability to locate the desired course or program.[2] Through a network of TEL services, Regional Colleges can help employees access required courses and programs, technology and other support resources at times and in places that best accommodates their schedule.
- TEL services can provide support to employers who are introducing technology into their operations by helping them access customized training and support.
- A growing number of 18 to 24-year-old youth are entering post-secondary education and training. Most Saskatchewan high school graduates entering post-secondary education enroll in public institutions in the province. The increased enrollments are creating pressure on the institutions' infrastructure and resources to meet the demand. The institutions must find new ways to

[1] Sector Strategic Plan, developed by Policy and Planning Branch, Saskatchewan Post-Secondary Education and Skills Training, September 2000.
[2] "Adult Education and Training Survey," Applied Research Branch, HRDC.

"ramp up" and add capacity. Access to credit programs in the student's local community provides a potential option for young people to gain entrance to high-demand programs and to reduce the cost of education.

- The February 2000 Saskatchewan Omnibus poll found that 29 percent of Saskatchewan residents would like to be able to take a degree or certificate program by way of the Internet. A recommendation frequently voiced at public consultation meetings on student financial access to post-secondary education and skills training, held in January 2000, was to use technology to enhance access in rural and northern areas.

Providing access to post secondary education opportunities is critical to many population groups in Saskatchewan. As the provincial government's "Partnership for Prosperity" report states:

> "Business, educational institutions and government must develop approaches that enable people to continually educate and re-educate themselves through the course of their careers...The delivery of this training and education should also include leading edge technology, both in the programs and courses that are delivered and in how they are delivered.[3]

Using information technology, Saskatchewan businesses are extending their reach into the global marketplace. The provincial government has established a goal to foster knowledge businesses in rural Saskatchewan[4]. Continued expansion of knowledge businesses will mean continuous training and up-skilling to respond to market demands. The Regional Colleges have a proven ability to respond to specific training needs of local businesses by brokering or creating training programs tailored to specific needs. The Regional Colleges' Network of TEL Services will enhance the colleges' ability to support economic and community development.

In conclusion, TEL services will:

- Help learners by providing access to the education and skills training opportunities, resources and services that will enable them to be successful in their home communities.
- Support economic and community development in rural and northern Saskatchewan.

[3] "Partnership for Prosperity", Saskatchewan Economic Development.
[4] "Partnership for Prosperity", Saskatchewan Economic Development.

4. ENVIRONMENTAL SCAN

The Vision Development phase included a review of current TEL initiatives by the Regional Colleges, research of TEL activities in other jurisdictions and an Internet search of relevant articles. This section provides an overview of the results of this research and an analysis of lessons learned and best practices to be considered in designing TEL services.

4.1. CURRENT COLLEGE INITIATIVES AND RELATED ACTIVITIES

Regional Colleges have considerable experience in using technology to deliver education and training. For more than ten years, the Regional Colleges have been working with the Saskatchewan Communications Network (SCN), providing ground level support to students taking credit courses via televised satellite broadcasts. Currently, there are 51 Regional College sponsored SCN sites across the province where learners attend the broadcast sessions (see Figure 2 on the following page). This mode of delivery has the advantage of video presentation but requires students to attend when broadcasts are scheduled and where receive sites are located.

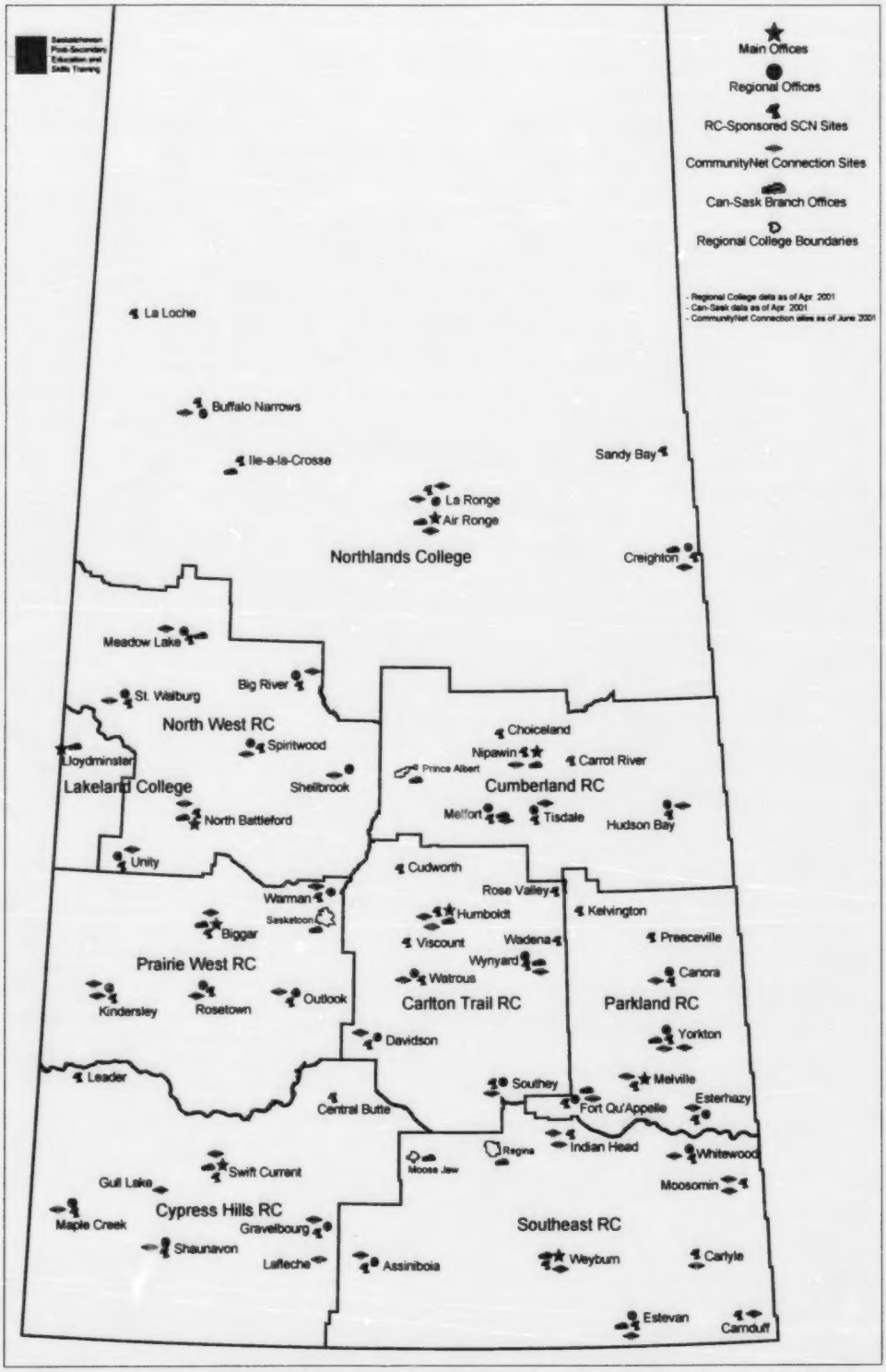
In addition to the televised programming, Regional Colleges also offer programs and courses that utilize various technologies for delivery and learner support in other locations within their region. They are also involved with partner organizations in a variety of TEL pilot projects. The following highlights several examples:

Southeast Distance Education Pilot Project

A partnership of Southeast Regional College (SERC), Parkland Regional College (PRC), Cypress Hills Regional College (CHRC), PSEST, Saskatchewan Education, the University of Regina, the Southeast Education Foundation, SCN, SaskTel, and several school divisions is currently completing a three year pilot to develop and deliver online, multimedia K-12 and post-secondary level courses. The program uses a variety of technologies including videoconferencing through PictureTel, and WebCT and ClassPoint software for authoring and delivering content over the Internet.

Preliminary evaluations of the project indicate that TEL can open up new opportunities and ways to deliver education. However, capitalizing on the opportunities requires partnering for technical expertise, finances, support staff, equipment and other materials. It also requires the institution to examine its current mode of operation and integrate TEL as part of the normal course of business.

Figure 2: Regional College Offices, RC-SCN Sponsored Sites and CommunityNet Connection Sites



Regional College Offices, RC-Sponsored SCN Sites & CommunityNet Connection Sites

Rural Access Program

The Rural Access Program (RAP) is a two-year pilot project involving Prairie West Regional College (PWRC) and Parkland Regional College (PRC) in conjunction with SCN, SaskTel and the federal government through the Office of Learning Technologies (OLT). RAP is using web cams, video and WebCT software to deliver Adult 5-10 modules to students in a classroom setting and one home-based student, using both synchronous and asynchronous delivery modes.

The students in the RAP project had low technological literacy skills at the start of the project. As the project progressed, the students not only developed academic skills but also expanded their abilities in using the technology to begin to experiment and use the tools to perform tasks that were not taught as part of the course. The Regional Colleges involved in the project found that using TEL provides flexibility in adapting to the different learning styles of students, and in the timing and scheduling of their courses. Staff members have also benefited from the opportunity to develop their technical expertise and to learn how technologies can be applied in teaching and helping learners.

Electrician Apprenticeship Level 1 Training

Several Regional Colleges have participated in a pilot with SIAST to deliver Electrician Apprenticeship Level 1 Training using LearnLinc. LearnLinc provides two way audio synchronous online delivery with an electronic "whiteboard" visible to participants via a computer monitor. Using their computers, students are able to electronically "raise their hands" to ask questions, point to items on the whiteboard, send messages to each other, the instructor or the whole class, and save and print items on the whiteboard.

The technology provides a higher level of interaction than televised courses. However, the colleges have found that online synchronous delivery requires more technical support prior to initiating the program, ensuring that appropriate space, computers and staff are available and ready, installing software and testing the computers and network. A high degree of technical support is also required during the first few sessions, providing assistance and advice to learners about using the equipment and how instruction will be provided.

Industrial Instrumentation Technology Program

Northlands College, in conjunction with the Southern Alberta Institute of Technology (SAIT), offered a two-year Industrial Instrumentation Technology program. The program utilized a combination of paper-based correspondence materials with an instructor for some classes, LearnLinc software for online audio conferencing with an electronic whiteboard for several classes and online tutorials. Testing was also conducted online and lab work was scheduled into concentrated periods at the SAIT campus in Calgary.

Northlands and SAIT had tutors available to the students via phone and in the classrooms during the online courses. A local tutor was also available to help students with the Computer Aided Drafting (CAD) module during study times.

Benefits from this approach included delivering a full two-year program, primarily within the students' community by using a combination of media, and responding to local labour market requirements. Three of the six graduates found work in the area.

Ed2Go

In addition to these pilot projects, Regional Colleges offer online programs through Ed2Go. Ed2Go is an Internet-based service of online small business and management courses that learners can access through a Regional College Web page on the Ed2Go Web site. The advantage of this model for a Regional College is the ability to add to its courses and programs offerings without adding administrative overhead. The advantages for the learner are that the courses are self-paced and can be accessed at the learner's convenience.

Findings from Regional Colleges' TEL Initiatives

Through the various TEL initiatives in which they have participated, Regional Colleges have found that successfully deploying TEL requires:

- Providing support for learners at whatever point they are at. Some students may require more support in areas such as career counselling, study skills, essay writing and math refresher. They may also need assistance in obtaining financial support and dealing with personal barriers, social barriers or learning disabilities that will impact their learning.
- Providing many different supports such as tutors and counsellors through phone, e-mail and on-site visits.
- Having technical support readily available to help when problems happen.
- Ensuring that the environment being developed is sustainable (i.e. having adequate funding to continue and upgrade as necessary).
- Responding to the needs of learner - adapting technology to the subject matter and type of learner.
- Ensuring peer support and social interaction occurs between learners is important for the learning process. Developing TEL services can facilitate electronic and "face-to-face" interactions.
- Changing college practices and processes to make this mode of delivery a core part of the business.
- Conducting evaluations to continuously improve content, delivery and support.

- Forging partnerships with the post-secondary institutions and other organizations to help address resource needs and issues that arise in delivering TEL.

The Regional Colleges have also found that using technology appropriately yields a number of benefits, including:

- Students and staff learn to use different technologies.
- Technology enhances the learning process.
- Technology provides opportunities to adapt course material to the individual's learning style.
- Technology extends the ability of the Regional Colleges to respond to local training needs.
- Technology provides some flexibility in the timing and scheduling of training.

4.2. CommunityNet

Scheduled to begin implementation in June 2001, CommunityNet will connect government offices, educational institutions and health facilities to high-speed Internet service in 366 Saskatchewan communities.

As the map in Figure 2 illustrates, when CommunityNet is implemented in the Regional Colleges, it is proposed that all major college locations will have high speed Internet access (384 Kbps or higher). In most facilities, line speeds will be 128K or higher. Having high-speed Internet capability will enable colleges to offer more TEL courses and to provide learners with access to Internet-based services and resources.

4.3. Headwaters Project

The Headwaters Project is one of twelve Smart Communities projects sponsored by Human Resources Development Canada. The project will create Community Access Centres at 40 local schools, providing northern residents with distance education, e-commerce and community services via Internet based technologies. Distance education will be delivered through the Headwaters Education Centre. A Web site will link students to virtual classrooms where they can take post-secondary courses, participate in online chats with peers, and contact peer counsellors and program advisors.

4.4. Other Jurisdictions

A survey was conducted to gather information about services and programs that organizations in other jurisdictions are providing to help learners identify, access, and succeed in their education and training using TEL. The Working Group

selected jurisdictions considered to be leaders in TEL delivery of post-secondary education and having similar geographic and demographic characteristics to Saskatchewan. The results of the survey are presented in the report, *Survey of Technology Enhanced Learning Models and Best Practices from Other Jurisdictions.*

In addition to the survey, an Internet-based search was conducted around the themes of TEL and post-secondary distance education. The materials were reviewed for trends and best practices in applying technology to deliver distance education.

The research revealed a number of trends and lessons learned by other jurisdictions that can be applied in the implementation of the Regional Colleges' Network of TEL Services.

Rapid growth in online course offerings - The availability of online courses is accelerating rapidly. In 1998, Canadian post-secondary institutions offered over 1,800 online courses.[5] A survey conducted in 2000 identified more than 5,000 online course offerings by Canadian post-secondary institutions.

Most of the online course offerings appear to be in the liberal arts, business and administration, information technology and health sciences. The main delivery channel being used is the Internet. While the Internet will be the channel, the mode and media will vary. A survey of over 2,500 U.S. based institutions found that:

- 61 percent were considering starting or increasing the number of course offerings that utilized two way audio/video while only 17 percent were considering starting or increasing the number of courses with one way video and two way audio.
- 60 percent were going to start or increase the number of Internet courses offered in a synchronous mode and 82 percent were going to start or increase the number of courses offered in an asynchronous mode.[6]

With more selection available for a particular area of study, increasingly students will have the opportunity to select a mode based on personal preference, convenience and cost.

As the survey of models and best practices found, WebCT appears to be the current software of choice for developing online courses. WebCT provides the ability to deliver courses in both synchronous and asynchronous modes, allowing

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[5] Sector Strategic Plan, developed by Policy and Planning Branch, Saskatchewan Post-Secondary Education and Skills Training, September 2000.
[6] U.S. Department of Education, National Center for Education Statistics, PSE Quick Info System, 1998-99.

the developer to choose the mode best suited for the material, his/her own schedule and students' schedules. Other software being used includes ClassPoint, LearnLinc and Microsoft NetMeeting.

Rationalization of TEL offerings and development of consortia – In the past, the development of online courses and programs was usually done within the individual institution and often within a few departments or faculties. However, there is a growing trend towards a more integrated approach to online programming that includes both on-campus and distance courses to gain competitive advantage in a global market for education. As well, planning for TEL and distance education is increasingly happening at the inter-institutional level. The past few years have seen a significant increase in the number of consortia of post-secondary institutions delivering online programs and courses, including:

- Universitas, a consortium of 21 research universities from countries such as Scotland, England, Australia, Hong Kong, New Zealand and Canada.
- Campus West, a consortium of 12 western Canadian universities that provide the opportunity for learners to take courses offered by partner institutions, delivered in alternate formats.
- The Canadian Virtual University, a recent partnership of eight Canadian universities to provide university programs through distance education.
- Western Governors University, a degree granting institution that offers distance education courses from a number of colleges, universities and corporations across the United States.

Diverse student populations – Several jurisdictions that have gathered demographic information about their learners have found a wide diversity in the student populations using their education Web sites. For example, while there are some youth taking online courses at a distance, most youth opt for the experience of being on-campus, using online education to supplement their programs. The majority of online learners are people who have been out of high school for some years. For example, Manitoba found that 75% of their students were mature adults.

These jurisdictions have also found that a significant number of their online learners have lower incomes than the jurisdiction's average. Their statistics also show that women tend to use these Web sites or learning centres more than men do (60% to 75%). These learners appear to be taking online courses for self-interest, or to complete studies initiated in the past. They tend to need extra technical, academic and study support initially, but the need for support decreases as the course progresses.

Support services are critical to student success – The survey of other jurisdictions found that technical literacy was not a major concern. Even learners

who were computer illiterate could develop the necessary skills to access and participate in the course, if there were resources to help the student feel comfortable with the technology at the front-end and assurances provided of readily available support at the back-end. The greater area of need was academic and student support. For example, the Distance Education Learning Centre in British Columbia noted "a high and ongoing need for academic support" and that "a lot of learners would benefit from face-to-face contact with instructors." New Brunswick's Connect NB is piloting a virtual mentor project to "help the student feel connected to the educational experience".[7]

Studies conducted in other jurisdictions have found that there was a positive correlation between completion/matriculation and the use of various support services. These services include peer mentors, one-to-one & group tutoring, career counselling, study skills and personal development workshops, project orientation, academic monitoring.[8] Institutions, such as Athabasca University, that specialize in distance education have counsellors and advisors for pre-enrollment consultation, as well as course tutors available by telephone when a student has questions or is experiencing difficulties.[9]

Similarly for basic education, institutions that provide these programs using technology have found that having interaction between instructors and students is an integral element to success in learning. As one study of technology in basic education found:

> "Computerized technology used by students in remedial programs may change the role of the instructor to that of a facilitator but the computer does not replace the instructor...In one sample feedback from students...80 percent stated they wanted more time with the instructor to confirm what they were learning from the computerized lessons."
>
> "A second observation from many institutions using these types of programs (computer-assisted instruction) is that collaborative learning is a critical component to computer-assisted remedial education. Student-to-student communication was either built into the program through the use of computer software or was strongly encouraged in remedial/developmental programs. Student and instructor feedback indicated this was easy to accomplish through e-mail and LANS and was an important part of the learning process."[10]

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[7] Survey of Models and Best Practices from Other Jurisdictions, Bailey Consulting Group for the Regional Colleges' Network of Tel Services Implementation Plan Working Group, p. 20.
[8] "Factors Influencing the Non-matriculating Student", C. Hawkins and M. Orlowski, The Michigan Community College Journal, Spring 1996.
[9] Survey of Models and Best Practices from Other Jurisdictions, Bailey Consulting Group for the Regional Colleges' Network of Tel Services Implementation Plan Working Group.
[10] Using Technology in Remedial Education, Jennifer Rinella Keup, (www.gseis.ucla.edu/ERIC/digests/dig9810.html)

As a result of these findings, attention is being focused on more personal learner support. Some practices being used include assigning mentors and/or tutors to each student, and providing learning centres where learners can access not only technology but also academic advice, financial support, technical support, library materials and study skills training. The centres also provide a place for students to interact with each other.

Differing learner support models – The jurisdictions surveyed tended to take one of two approaches to providing learner support services. Some jurisdictions favour a program specific model, whereby services were only offered to learners taking courses and programs from their institutions. For example, Campus Manitoba's satellite campuses and resource centres are for students enrolled in the sponsoring institutions.

Other jurisdictions have an open model that provides services to anyone. For example, Contact North has 145 public access centres across northern Ontario that are open to the public and are often used by distance education students. These centres are located in post-secondary institutions, high schools and learning centres. Contact North covers network and telephone costs and the communities provide the facility and equipment, so services are provided at no cost to the student. A form of this public access model is favoured for the network of TEL services.

4.5. Conclusions

The field of distance education and TEL is changing rapidly; best practices and models are still taking shape. However, several common themes are emerging:

The range of choices is expanding – The number of online courses and programs is growing and the modes of delivery are changing. Having the ability to broker programs and courses from other institutions will give Regional Colleges greater flexibility in selecting and tailoring courses to respond to the needs of learners and employers in their communities.

Partnerships are becoming critical – As competition for the distance learner increases, institutions are developing consortia with other institutions and organizations to provide collective learning opportunities and services that would be too expensive to offer individually.

"High tech" delivery needs personalized support – The experiences of Regional Colleges and other institutions indicate that the most successful programs incorporate personalized services with "high tech" delivery. Tutors, mentors, peer support groups and counsellors play an important role, particularly for more dependent learners. These services must be planned into the program and appropriately funded.

In conclusion, having appropriate levels of support resources and services will help ensure the success of Saskatchewan's TEL initiatives. These resources and services should include:

- Computers available for instruction and for learners to use for assignments and research. These computers must be equipped to access resources such as the Internet and CD-ROM based software programs.
- Technologies such as video conferencing, audio conferencing and electronic white boards that allow an instructor in a different location to present course materials and interact with students.
- Technologies, such as faxes, electronic bulletin boards, e-mail and phones, that allow students to contact and interact with instructors, tutors and peers.
- Various staff, including technical support staff to install technology and troubleshoot, counselling staff to provide pre-enrollment assistance, career and personal advice, and tutors to reference when questions arise.
- Partnerships with public and private sector organizations. Partners assist in a variety of areas, including:
  - providing educational and technological staff, and financial resources;
  - identifying and responding to training requirements; and
  - offering various services to support students.
- Local facilities available for students to access study spaces, to meet with peers, instructors, tutors, and counsellors, and to access library materials and technology resources.

As the Saskatchewan post-secondary education institutions develop online content and incorporate TEL into course and program delivery, it is important that support services for learners are put into place. Making these services available and accessible to people living in rural and northern Saskatchewan is the vision of the Regional Colleges' Network of TEL Services.

5. THE REGIONAL COLLEGES' NETWORK OF TEL SERVICES

As part of creating the Implementation Plan, the Working Group developed the following vision and guiding principles to provide focus and set direction for the activities that would flow out of the plan (Figure 3). It is recommended that this vision and guiding principles be adopted and incorporated by the post-secondary sector in planning and designing TEL initiatives.

5.1. VISION

The Regional Colleges' Network of TEL Services will provide learners, employers and communities in rural and northern Saskatchewan with access to services that enhance their participation and success in post-secondary education and training opportunities using information and communication technologies.

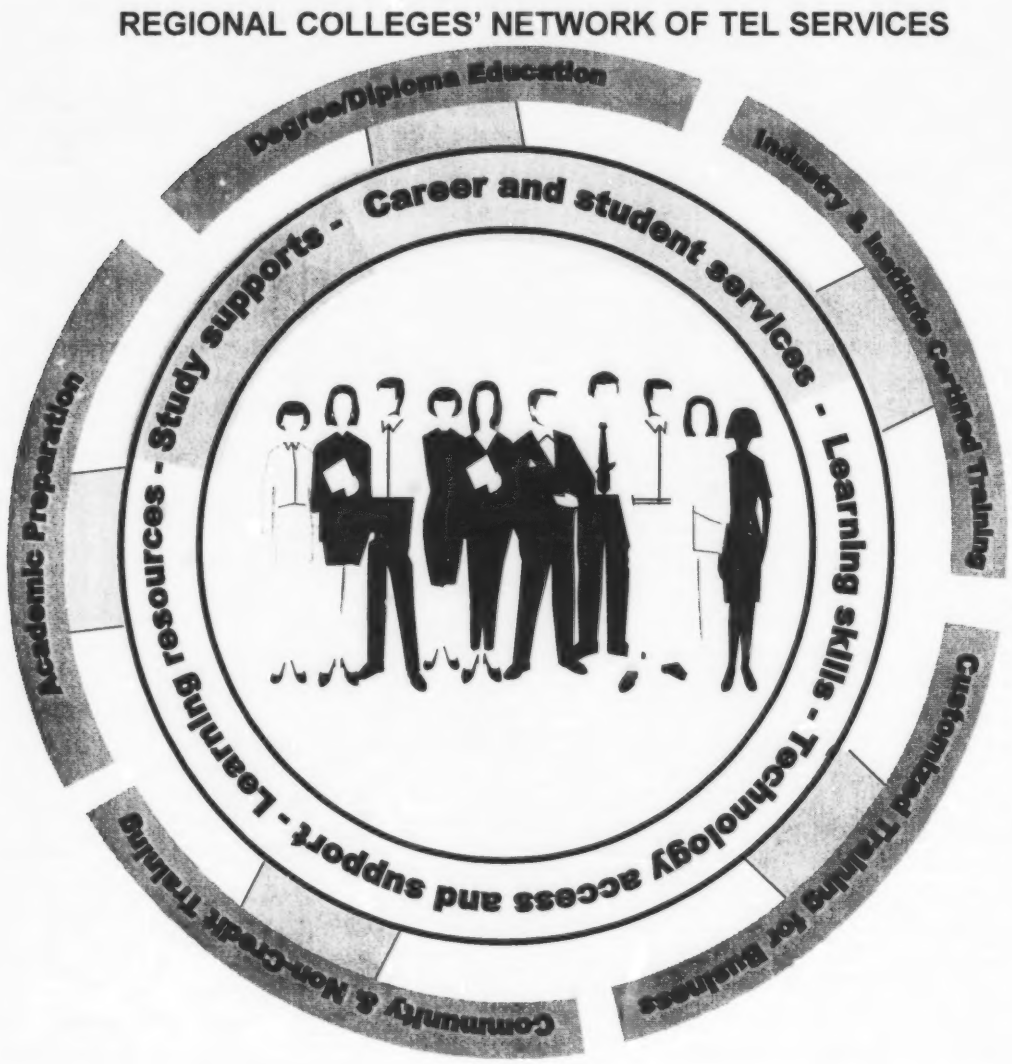
The Regional Colleges' Network of TEL Services will promote the development of local "communities of learning" within the larger world of learning. Using the network, participants can connect to, communicate with and collaborate with educators, educational institutions and other learners.

As the primary agents of TEL services in rural and northern Saskatchewan, the Regional Colleges will have the technical and human resources, skills and access to online education and training services that will enable them to respond to local needs. In collaboration with partners, the services to be provided through the network include:

- *Access to career and student services* – services that assist clients through the pre-enrollment and enrollment process, e.g. educational planning, career counselling, registration assistance, advocacy with educational institutions and other agencies.
- *Access to learning opportunities* – use of various technologies and modes to enhance and/or provide degree/certificate/diploma programs, academic preparation, industry and institute certified training, non-credit and community training and customized, skill training for business.
- *Instruction in learning skills* – preparatory skills training in areas such as study skills, time management, technology skills, orientation to distance learning, and writing and math skills to increase the clients' success in learning.
- *Access to technology and technical support* – providing clients and staff with access to computers, fax machines, the Internet and other technologies, and technical support to assist in the use of these technologies.
- *Access to learning resources* - providing access to materials in hard copy and electronic formats.

- *Access to study supports* – providing clients with access to study spaces, meeting rooms, mentoring, tutoring, discussion groups, peer support, exam preparation and invigilation.

Figure 3: Components of the Regional Colleges' Network of TEL Services


REGIONAL COLLEGES' NETWORK OF TEL SERVICES
Degree/Diploma Education
Industry & Institute Certified Training
Customized Training for Business
Community & Non-Credit Training
Academic Preparation
Career and student services - Learning skills - Technology access and support - Learning resources - Study supports -

5.2. GUIDING PRINCIPLES

The following principles guide the development of the implementation plan for the Regional Colleges' Network of TEL Services and for monitoring its performance.

Access – The Regional Colleges Network of TEL Services will provide learners with access to a range of TEL programs and services within their own community.

Collaboration – Partners in the Regional Colleges Network of TEL Services will work collaboratively to ensure the learners' access to quality services, resources and learning opportunities.

Learner Centredness – The services to be provided through the network will focus on making the learning experience as user friendly and accessible as possible, from pre-enrollment to post-course follow-up.

Responsiveness – The Regional Colleges Network of TEL Services will respond to local education and training needs by making the network resources as accessible as possible within the learner's own community.

Service consistency –The Regional Colleges Network of TEL Services will ensure consistency in the core services provided across the province.

Credible education and training opportunities –The education and training opportunities available through the Regional Colleges Network of TEL Services will be of a high quality that is credible and of value to industry, the learner and the education community.

Knowledgeable staff – Staff will have the skills and knowledge to determine what technologies are required and how they can be applied to meet learners' needs.

6. ANALYSIS OF EXISTING RESOURCES AND INFRASTRUCTURE

The Network of TEL Services will build on the current services provided by the Regional Colleges. It is important, therefore, to identify the resources required and assess the existing resources and infrastructure relative to the services to be provided in order to identify strengths, weaknesses, opportunities and risks to be addressed in the implementation plan.

6.1. ADDITIONAL TEL SERVICES DEFINITION

To assist in identifying the resource requirements, the working group developed more in-depth definitions of the TEL services to be provided by the network:

Access to Career and Student Services – includes a variety of services that begin in the pre-enrollment stage and are available to the learner throughout their learning experience. The services include:

- Academic advising on programs and courses, pre-requisites and requirements
- Admission and registration assistance
- Advocacy with educational institutions in areas such as Prior Learning Assessment and Recognition (PLAR) and credit transfers
- Financial assistance and information
- Career counselling and planning
- Learning styles inventory and assessment
- Testing and assessment
- Student needs assessment
- Personal counselling.

Access to Learning Opportunities – The Regional Colleges provide a range of learning opportunities for their communities, including:

- Academic preparation courses, including both Basic Education (BE) and General Educational Development (GED)
- Community and non-credit training programs
- Customized training, developed by the Regional College for a specific industry or organization
- Industry and institute certified training
- University education.

Instruction in Learning Skills – The Regional Colleges provide a number of services that give the learner study-related skills needed to be successful in their program. Instruction is provided one-on-one, in a class setting, or online for:

- Study skills
- Writing skills
- Math refresher
- Computer skills required for online learning
- Orientation to online learning
- Independent learning skills
- Library orientation
- Research skills
- Financial management
- Life skills and communications.

Access to Technology and Technical Support – To deliver and support learners taking TEL courses or programs, the following resources are considered to be key to the network of TEL services:

- Phones/fax
- E-mail
- Computers with Internet access
- Teleconferencing equipment
- Video conferencing equipment
- Software – both course-related programs and software that can be used by learners for assignments and reports, e.g. word processing, spread sheets, drawing and presentation software.

Access to Learning Resources – In addition to computers and other technologies, the Regional Colleges need to make learning resources such as books, reference materials, tapes and videos available that are required by different courses and programs.

Access to Study Supports – Learners need access to resources such as tutors, mentors, peer support groups and exam invigilators. The Regional Colleges also need to be able to provide cubicles, meeting rooms and classrooms for these interactions.

6.2. Required Resources

Regional Colleges provide a number of sites or delivery points across the province for learners to access their services. The map in Figure 2 presents the offices, delivery points, SCN sites sponsored by Regional Colleges, and proposed CommunityNet connections for each college.

Implementing the Regional Colleges' Network of TEL Services will require a variety of technologies, staff roles, facilities, materials and other resources. In identifying the resources required for TEL services, the Working Group also identified recommended quantities and qualities.

6.2.1. Technology

Computers – Learners and staff need access to computers to utilize in-house software, and Internet-based information and services.

Display/presentation technologies – Utilizing technology to enhance learning includes classroom-based instruction. Providing instructors with technologies such as electronic whiteboards and data projectors provides them with additional tools to improve content presentation.

Phones/Fax – In addition to computers, at times students require access to a telephone or fax machine for communications with instructors, other students, the Regional College or other organizations.

6.2.2. Human Resources

Counselling staff – Providing TEL services requires staff with skills and knowledge to determine learners' needs and help learners design and initiate a plan to address the needs.

Instructors – Finding and developing instructors with the appropriate knowledge and skill sets to teach TEL courses are key requirements.

Tutors – Finding and developing tutors with the appropriate knowledge and skill sets is required to assist learners both in a classroom setting and self-study.

Technical support staff – Providing technical support and training for the colleges' staff and learners is needed to support effective use of technology.

6.2.3. Facilities

Providing additional services will also require additional space for TEL activities. The design of this space must be flexible to allow for different modes of learning and multiple uses.

Office Space – Space is needed for staff working on course development and for counselling in confidentiality.

Classroom space – Classroom space is needed for both online and "live" instruction.

Study and meeting space –Space is needed for students enrolled in TEL courses or programs to meet with other students, study or access other resources.

6.2.4. Other Resources

Testing Instruments – Software and print-based versions of various testing instruments are required to enable counselling staff to diagnose a learner's interests, current skills, and any social, physical, financial and academic needs to be addressed.

Subscriptions – Learners and staff require access to hard copy and software resources such as career information, sources for financial assistance, databases, and other learning resources.

Library resources – Learners need access to books, tapes, videos, software and other materials for research and supplementary study.

The recommended levels for each of these resources are discussed in the section "*Implementation Plan Framework.*"

6.3. Current Levels of Resources

As part of the analysis, the Working Group conducted an inventory of resources at each permanent teaching location in each Regional College as of **April 30, 2001**. The results have been summarized in Table 1.

Table 1: Inventory of Resources at Each Regional College Permanent Teaching Location, April 30, 2001

Regional College	Key Locations	Technology	Staff	Facilities	Other Resources
Carlton Trail Regional College	5	· Computers for academic purposes – 62 · Phone/fax – 6 · Data projectors – 3 · Video conferencing equipment – 0 · Electronic whiteboards – 0 · Teleconferencing equipment – 1	· Counselling – 2.3 FTE · Technical Support – 1	· Study spaces – 0 · Meeting rooms – 1 per location	Subscriptions: · Career Explorer's Bridges software · Testing Instruments: COPS, CAAT, CTBS · Library Resources: some books, other materials available to students at Humboldt campus.
Cumberland Regional College	4	· Computers for academic purposes – 77 · Phone/fax – 6 · Data projectors – 4 · Video conferencing equipment – 0 · Electronic whiteboards – 1 · Teleconferencing equipment – 0	· Counselling – 3 FTE · Technical Support – 1	· Study spaces – 1 · Meeting rooms– 2 · Office space – 1 per location	Subscriptions: · Career Explorer's Bridges software Testing Instruments: · CTBS, Nelson Denny, COPS, CAPS, COPES, SDS, MBTI, learning styles inventory
Cypress Hills Regional College	4	· Computers for academic purposes – 58 Phone/fax – 7 · Data projectors – 3 Video conferencing equipment – 0 · Electronic whiteboards – 0 · Teleconferencing equipment – 1	· Counselling – 2 FTE · Technical Support – 1	· Study spaces – 1 · Meeting rooms – 1 at each of 4 locations · Office space – 1per location	Subscriptions: · Career Explorer's Bridges software, Choices · Testing Instruments: CTBS, COPS, CAPS, COPES, SDS, MBTI · Strong Interest Inventory, range of others · Library Resources: Some books, other materials

Regional - College	Key Locations	Technology	Staff	Facilities	Other Resources
North West Regional College	6	· Computers for academic purposes – 43 · Phone/fax – 6 · Data projectors – 0 · Video conferencing equipment – 0 · Electronic whiteboards – 0 · Teleconferencing equipment – 1	· Counselling – 1 FTE · Technical Support – 1	· Study spaces – 0 · Meeting rooms – 1 per location · Office space – 1per location	Library Resources: · Some books, other materials
Northlands College	3	· Computers for academic purposes – 44 · Phone/fax – 3 · Data projectors – 3 · Video conferencing equipment – 0 · Electronic whiteboards – 3 · Teleconferencing equipment – 1	· Counselling – 3 FTE · Technical Support – 1	· Study spaces – 0 · Meeting rooms – 1 per location · Office space – 1 per location	Testing Instruments: · CATT,COPS, MBTI · Learning Styles Inventory, TOWES · Real Times Real Life · Library Resources
Parkland Regional College	4	· Computers for academic purposes – 81 · Phone/fax – 1 at each center · Data projectors – 1 (Yorkton) · Video conferencing equipment – 3 (Yorkton, Esterhazy, Kamsack) · Electronic whiteboards – 0 · Teleconferencing equipment –1	· Counselling – 2 FTE · Learning Specialist– 1 FTE · Technical Support – 1.5 FTE	· Study spaces – 6 (4 cubicles in Yorkton, 2 in Fort Qu'Appelle) · Meeting rooms – 1 per major location, 1 in rural location · Office space – 1 per major location	Subscriptions: · CuSeeMe, · ClassPoint Testing Instruments: · Self Directed Search, MBTI, COPS, True Colours, ADHDT, ADDHD Checklist, WAIS-R, Myers Briggs, Woodcock Johnson, Discovery Wheel, Learning Styles Inventory, CTBS, COPS, CAPS, COPES, CCC Destinations · Range of other Library Resources.

Regional College	Key Locations	Technology	Staff	Facilities	Other Resources
Prairie West Regional College	5	· Computers for academic purposes – 102 · Phone/fax – 5 · Data projectors – 5 · Video conferencing equipment – 0 · Electronic whiteboards – 2	· Counselling – minimum of .5 FTE in each location · Technical Support – 1 FTE for 5 locations · Tutors – 10 (2 per location)	· Study spaces – 5 (1 per location) · Meeting rooms – 5 (1 per location) · Office space – 5 (1per location)	Subscriptions: · CuSeeMe, ClassPoint · Testing Instruments: Self Directed Search, MBTI, COPS
Southeast Regional College	10	· Computers for academic purposes – 80 · Phone/fax – 15 · Data projectors – 2 · Video conferencing equipment – 1 · Electronic whiteboards – 1 · Teleconferencing equipment – 1	· Counselling – 3.5 FTE · Technical Support – 1 FTE	· Study spaces – limited facilities at various sites · Meeting rooms – limited facilities at various sites · Office space – 1 per location	Subscriptions: · 1 or 2 distance education related subscriptions Library Resources: · The college's library resources are lodged with the South East Regional Library.

6.4. CURRENT SITUATION ANALYSIS

The following section presents an assessment of the Regional Colleges' ability to implement TEL services based on the current resources and TEL experiences. The assessment summarizes strengths, weaknesses, opportunities and risks identified by the Working Group.

6.4.1. STRENGTHS

Significant TEL Experience - The Regional Colleges have gained significant experience in requirements to deliver training, education and other services using TEL. Given the resources available to them, they have been very successful in developing computer labs, connecting their sites with wide area telecommunications within their regions, conducting pilot programs with different technologies and making computers accessible for learners.

Partnerships – The Regional Colleges have been successful in developing partnerships with federal, provincial and local government agencies, community organizations and business to develop and deliver programs. These partnerships have been particularly well employed in the TEL initiatives, enabling the Regional Colleges gain experience with the technologies and develop expertise in TEL delivery.

6.4.2. WEAKNESSES

Availability of computers - The computer equipment that the Regional Colleges has available for students is fully utilized by current programming. In the past few years, most of the colleges have instituted a replacement policy to keep their computer equipment more current. However, there is not a sufficient number of newer generation computers with Internet access and those that are available are at capacity. The delivery of new TEL services will require additional computers.

Lacks of other technologies – Most delivery points have few additional technologies available for use by learners. Most colleges provide e-mail for their learners. Staff members usually have access to a fax machine and e-mail. Electronic whiteboards and video conferencing equipment is very limited, and have usually been provided as part of a TEL pilot project. The computer and information technologies in the Regional Colleges are fully utilized by current program and service offerings.

Ability to train staff in technology – Staff are fully allocated and the colleges already need additional staff to meet current demand.

Limited staff training/up-skilling dollars – Most staff require information and training about available technologies, how to incorporate these technologies into teaching, and how to facilitate and support students who are using technology as part of their course or learning process. However, Regional Colleges do not have sufficient budget to meet staff training needs.

Restrictions in facilities – Many of the Regional Colleges' facilities are in smaller communities and are in rented facilities with limited infrastructure capability to support some new technologies.

6.4.3. Risks

Lack of long term funding – While there are funds available through the 2001-02 TEL budget and Centenary Fund, there is no long-term funding commitment for maintenance and upgrading for the technology, staff skill sets or other resources required by network of TEL services. This places the long-term sustainability of the network at risk.

6.4.4. Opportunities

Expansion of partnerships – The Regional Colleges have been successful in garnering partners and support for their TEL initiatives. In developing the Regional Colleges' Network of TEL Services, colleges have an opportunity to expand their partnerships with universities, SIAST, schools, libraries, government agencies and business to better utilize resources and increase access for clients.

Joint online resources – By collaborating to provide TEL services, Regional Colleges have opportunities to jointly develop and provide online resources and services in areas such as counselling and assessment.

Collaboration in training – Regional Colleges have opportunities to work together in providing technology and related training for staff.

6.5. Conclusions

In summary, Regional Colleges have been able to deliver good service with the resources available. However, they do not have spare capacity to deliver TEL services. Implementing TEL services will require:

- Acquisition of material and technical resources. The financing for these resources must take into account both initial purchase and the on-going maintenance and upgrading of some resources for a sustainable network.
- Additional staff to respond to learners' academic, personal and technical needs.

- Opportunities, time and financial support for staff to obtain the training they require in order to develop course materials and support their students.
- Continued development of partnerships and relationships to make the maximum use of resources.

The following plan outlines a phased approach for implementing a Regional Colleges' Network of TEL Services and building capacity in the colleges to provide learners, employers and communities in rural and northern Saskatchewan with access to TEL services.

7. IMPLEMENTATION PLAN FRAMEWORK

The proposed implementation plan framework for the Regional Colleges' Network of TEL services is comprised of two parts: **implementation plan scenarios** and **an implementation plan approach**. The implementation plan scenarios are designed to address questions regarding when should a particular scenario be implemented, what levels of service should be provided and what level resources are recommended. The implementation plan approach outlines recommended activities for the initial implementation and for ongoing updates to the network.

7.1. IMPLEMENTATION PLAN SCENARIOS

It is critical to take a flexible approach that gives the Regional Colleges latitude in applying the implementation scenarios in their own environment. Therefore, the following implementation plan scenarios are provided as guides for the Regional Colleges and PSEST.

The base level scenario describes the core services that would be initially implemented at a permanent learning facility. As the network becomes established, implementing a medium and high level scenario at a particular location will be based on demand and the availability of funding.

7.1.1. BASE LEVEL

TEL services available initially would offer students:

- extended access to Career and Student Services with the exception of personal counselling. The additional time may be in extended hours of service or more counselling time available.
- increased access to computers with office automation software and Internet access, a phone, faxing capability, an e-mail inbox for individual use, one video conferencing system and a part-time technical support staff.
- additional staff for exam invigilation, mentoring and tutorial services as well as learning support skills training (e.g. study skills, time management, writing skills).
- Additional study spaces and meeting facilities for students, as well as office space for staff.

Table 2 shows the proposed resource levels for implementing this scenario.

Table 2: Resource Levels Required to Deliver a Base Level of TEL Services

Resource	Quantity
Internet connected computers for individual use. For the coming year, new computers should be a 933 Mhz Pentium III class machine, with 128 MB of RAM and 10 GB of hard disk space.	6 computers
Phones /Fax	1
Video conferencing system	1
Teleconferencing system	1
Data projector	1
Offices (approximately 100 square feet per office)	1
Learner services staff	.75 FTE
Technical support staff	.25 FTE
Meeting rooms	1
Study spaces (e.g. cubicles)	4

7.1.2. MEDIUM LEVEL

The medium level scenario represents the preferred level of services and resources for the Regional Colleges' Network of TEL Services. If demand for TEL services warrants and additional funds are available, the Regional Colleges can add the necessary resources to augment and enhance the services being provided at one or more locations.

Table 3 shows the resource levels required for implementing a middle of the range scenario.

Table 3: Resource Levels Required to Deliver a Medium Level of TEL Services

Resource	Quantity
Internet connected computers for individual use	10 computers
Phones /Fax	1
Video conferencing system	1
Teleconferencing system	1
Data Projector	2
Electronic white board	2
Offices (approximately 100 square feet per office)	2
Learner services staff	.75 FTE
Technical support staff	.25 FTE
Meeting rooms	2
Study spaces (e.g. cubicles)	6

7.1.3. HIGH LEVEL

Table 4 shows the resource levels for an optimal level that would provide learners, employers and the community with a full offering of TEL services.

Table 4: Resource Levels Required to Deliver a High Level of TEL Services

Resource	Quantity
Internet connected computers for individual use	12 computers
Phones /Fax	1
Video conferencing system	1 per 2 classrooms
Teleconferencing system	1
Data projector	1 per 2 classrooms
Electronic white board	1 per class room
Offices (approximately 100 square feet per office)	1 per staff
Learner services staff	1 FTE
Technical support staff	1 FTE
Meeting rooms	3 +
Study spaces (e.g. cubicles)	8-10
Other resources	A resource library of education and career development related books, tapes, videos, etc. for learners.

7.2. Recommended Implementation Plan Approach

Each Regional College is at a different starting point relative to its experience with TEL and each operates within a unique context. The recommended approach for implementing the network is to use a two-step process:

1. Using the base level scenario as a guide, each Regional College will implement a pilot based on a tactical plan that they will develop. The tactical plan will outline how the college will adapt the base level scenario in its environment in order to provide the core services and resources. The pilot will be initiated within the year following approval of the tactical plan.
2. Incorporate future planning for the network into the Regional Colleges' annual business planning cycle.

7.2.1. Pilot the Base Level Scenario

The first step toward initiating the Regional Colleges' Network of TEL Services this fiscal year is to have each college develop a tactical plan for a pilot project that will implement the base level scenario of resources and services in at least one or more delivery points. The pilot would run for a minimum of 2 years in order to allow the Regional Colleges to gain experience with the network of TEL services prior to full implementation. The plan should include:

- Plans and costs for technology purchases and facility upgrades required in support of technology infrastructure additions and enhancements. A base budget estimate is provided in Table 5.

Table 5: Budget Estimate to Implement a Base Level TEL Services Pilot

Item	Unit Cost	Quantity	Amount	Assumptions
Computer	$3,000	6	$18,000	Minimum of 933 Mhz, 10 Gb HDD, 128Mb RAM, Ethernet card, Web CT & ClassPoint licenses
Meeting Room	$30	300	$9,000	Approximately 15 x 20 ft @ $30/ft for renovations; does not include rent
Workstations for TEL Computers	$4,000	6	$24,000	includes desktop surface, three walls, chair
Electronic Whiteboard	$3,000	1	$3,000	A portable model for use in multiple meeting rooms.
Audio Conferencing System	$500	1	$500	
Video Conferencing System	$6,200	1	$6,200	
Data Projector	$4,500	1	$4,500	
Office Space	$30	100	$3,000	Does not include rent
Tables	$300	3	$900	
Chairs	$150	16	$2,400	6 for workstations, 2 for office, 8 for meeting room
Workstation space	$30	370	$11,100	Does not include rent
Printers	$1,000	1	$1,000	1 laser, 1 inkjet colour printer
Server upgrades	$2,000	1	$2,000	1-8 port hub, and 64Mb RAM, 5 Gb HDD of upgrades for the server
Scanner	$300	1	$300	
Phone/fax	$200	1	$300	
Counsellor/Technical Support	$4,000	12	$48,000	Assumed 1 full time resource with a pay scale of $3700-$4000 per month for 1 year
		Total:	**$134,200**	

- A schedule of staff development activities related to the use of particular technologies and incorporation of TEL in education and training delivery.
- A marketing plan to promote the college's TEL capabilities and TEL network services.

Assuming adoption of the implementation plan and guidelines by June 2001, the Working Group recommends that the Regional Colleges have the tactical plans for their pilots completed within 4 months or by October 31, 2001.

These plans should be shared with other Regional College committees, such as the Distance Education Services Committee, for information and to foster opportunities for network-wide initiatives, for example, joint development of Web-based learner support resources, instructor or staff training, or implementation of a technical support hot line.

Regional Colleges will conduct an evaluation of the TEL services pilots. The results of the evaluations and actions identified should be shared other groups in order to learn from others' experiences and identify opportunities for future joint initiatives. These findings and experiences can then be used as input into the second phase in the process, the ongoing planning for the Regional Colleges' Network of TEL Services.

7.2.2. Incorporate Network of TEL Services Planning into the Annual Planning Process

The Regional Colleges' Network of TEL Services will continue to evolve after the initial implementation. In order to maintain and develop the network, Regional Colleges will need to incorporate both enhancements and upgrades for the Regional Colleges' Network of TEL Services into their business planning process. The proposed approach is to build ongoing implementation planning for TEL services into the Regional Colleges' annual business planning process starting in fiscal 2002 – 2003.

8. ASSUMPTIONS

The vision and implementation scenarios are based on the following assumptions:

1. The resource requirements are based on available research and the experience of Regional College staff. TEL delivery will be a new mode of business for several years and some adjustments in the number, type and timing of resources can be expected as the colleges develop their tactical plans.
2. The vision of the Regional Colleges' Network of TEL Services is supported by the department and the Regional Colleges and aligns with the Sector Strategic Plan.
3. The estimates provided for technologies, renovations, etc. are based on currently available rates and are for budget purposes only.

9. ISSUES

Several issues were identified during the implementation planning process that will need to be addressed as implementation of the Regional Colleges' Network of TEL Services begins.

1. *Supporting home-based learners* – The Regional Colleges may need to review support for home-based learners and design an appropriate approach, if demand warrants, for providing this level of service.
2. *Hours of service changes* – The Regional Colleges may need to review and change their hours of service to meet demand increases or changes required to make access more convenient for learners. A change in the hours of service may require additional staff to provide these services.
3. *Financial model for a sustainable network* – The Regional Colleges need an appropriate and stable level of funding that ensures the resources required for the network of TEL services are available and can be maintained.

10. RECOMMENDATIONS

The following recommendations are provided to assist the Regional Colleges and PSEST as they start development on the Regional Colleges' Network of TEL services.

1. It is recommended that the Regional Colleges and PSEST adopt the vision, guiding principles and services as the framework for a network of TEL services.
2. It is recommended that each of the Regional Colleges, using the base level implementation scenarios, develop a tactical plan that outlines the services and key activities of their TEL services implementation pilot. This plan will become the basis for disbursing funding from the provincial TEL budget and the Centenary Fund. With adoption of the implementation plan by the department and Regional Colleges, the colleges should complete their tactical plans within four months of approval of this report.
3. It is recommended that baseline funding to maintain and enhance the Regional Colleges' Network of TEL Services be built into the provincial TEL budget and the Regional Colleges' budgets.
4. It is recommended that a public communications plan for this initiative be developed. The communications plan should highlight the key role to be played by the Regional Colleges' Network of TEL Services in the development of Campus Saskatchewan, and emphasize the need to coordinate with key stakeholders as a provincial initiative. The communications message should focus on the services being offered, the resources used and the services to be available in rural and northern Saskatchewan.
5. It is recommended that the Campus Saskatchewan Learner Support Services Task Team and the Regional Colleges' Network of TEL Services Working Group maintain a dialogue regarding concepts, findings and lessons learned as each move forward on their respective projects and coordinate their activities to build a province-wide approach to learner support services.
6. It is recommended that the Regional Colleges, using the implementation scenarios together with labour market and needs assessment information for their regions, articulate how they will integrate TEL services into their future business plans.
7. It is recommended that the Regional Colleges initiate staff development with regards to the use of technology in the delivery of education and providing support services. This activity should be linked to the collaborative development of faculty support and professional development for Campus Saskatchewan.

8. It is recommended that the Regional Colleges investigate opportunities for working together and with other post-secondary institutions in a buying consortium for TEL services resources.
9. It is recommended that the Regional Colleges establish standard workstation configurations to ensure that workstations designated for use in TEL services are adequately equipped to meet the requirements of the course software. The configuration standards should address processor speed, memory, hard disk capacity, network connectivity, operating system and peripherals, as outlined in the recommended implementation plan scenario.
10. It is recommended that the Regional Colleges, as the primary delivery agents of post-secondary education in rural and northern Saskatchewan, be members of Campus Saskatchewan and be included in the development of Campus Saskatchewan and in ongoing planning activities.
11. It is recommended that Campus Saskatchewan become the body that facilitates inter-institutional collaboration in areas such as needs assessment, program development, program planning, course scheduling and articulation of roles and responsibilities for learn support services.

APPENDIX A - NETWORK OF TEL SERVICES WORKING GROUP MEMBERS

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